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RESTORATION OF THE DONETS BASIN

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In the years before World War II, the Stalin Five-Year Plans attained excellent results in the Donbass. In 1940, 85,500,000 tons of coal were mined in the Donbass, 3.4 times as much as in 1913. The high total obtained was primarily due to mechanization of the coal-mining processes. In 1940, 93.5 percent of all coal obtained was extracted by mechanical means. The introduction of new machines and techniques in coal mining led to higher production in old mines and to the opening of new mines. New machines included heavy coal cutters, conveyors, electric locomotives, pneumatic drills, bore hammers, loading carts, etc.

By the beginning of World War II, difficult and labor-consuming productive processes, such as digging and cutting coal, the hauling from stope to surface, and conveyance of coal, had attained a high degree of mechanization.

Decisions reached by a commission under Molotov in 1930, and incorporated into law in 1933, guaranteed mechanization in the Donbass coal mines. By 1940, 93.5 percent of the digging, 67.9 percent of the cutting, 94.1 percent of hauling and 73.5 percent of conveyance was mechanized. Medium and large mines produced from 700 to more than 1,000 tons daily.

Tens of thousands of mechanics had to be trained to handle the new equipment, and a great reservoir of skilled labor was thus created.

In Tsarist Russia, most of the mining had been done by peasants during the winter, or poor harvests. Now a skilled professional group of miners, from whose midst the Stakhanovite movement sprang, did the mining. Fine new quarters were built for these miners.

As a result of increased mechanization, in 1940, labor productivity in the Donbass was twice that of 1928. Before the war, the Donbass as a whole produced 57 percent of all coal mined in the Soviet Union. The former

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People's Commissariat of Coal had 314 primary large- and medium-capacity mines and about 2,000 small-capacity mines which belonged to other departments; 72 more mines, with a daily mining total of 101,000 tons, were in process of construction. Some of these new mines had already been put into partial service.

In addition to the construction of coal mines, a great machine-building base which produced machinery for the coal-mining industry, ore-processing plants, and central electrical and mechanical repair shops for repair of mining equipment, were also constructed. The productive capacity of the coal-mining machine-building plants in the Donbass supplied all its needs and a large portion of the needs of other national coal basins.

Coal-mining machine-building plants in the Donbass included Gorlovskaya Plant imeni Kirov, Krivoy-Torets Plant, Plant of the 15th Anniversary of LENIN, Voroshilovgrad Plant imeni Parkhomenko, etc. These plants produced lifts, cutting machines, ventilators, centrifugal pumps, belt and scraper conveyors, conveyor gears, and mine trolleys. The People's Commissariat of Coal owned 282 locomotives, 1,342 railroad cars, and 1,520 kilometers of railroad tracks.

The Donbass guaranteed all the coal supply of the metallurgical industry, of electric power plants, of railroad transport and other industries of the South, and a part of the coal supply for central areas.

During the German occupation, the Donbass was completely devastated. The 314 primary mines, excluding the smaller mines, were destroyed; 280 mine pile drivers, and 515 lifts were blown up; and 8 million cubic meters of industrial plants and installations were destroyed or damaged. More than 2,100 kilometers of mine workings were sealed up or flooded. Thousands of items of machinery and equipment were destroyed. The Donbass metallurgical and machine-building plants were ruined.

Donbass living quarters, which occupied more than 4 million square meters before the war, were 64 percent destroyed. Cultural and service institutions, clubs, schools, hospitals, dining halls, etc., were 88 percent destroyed. Mining towns and settlements were all virtually wiped out. All the coal-mining machine-building plants, the ore-processing plants, and the central electrical and mechanical workshops, as well as other coal-industry enterprises, were blown up or burned. Total damage inflicted on the Donbass coal industry by the Germans amounted to 13 billion rubles.

The Germans also destroyed the ferrous metallurgical industry of the Donbass. Among the metallurgical plants destroyed were Makeyevka imeni Kirov, Kramatorsk imeni Ordzhonikidze, Stalino, etc. The Germans destroyed 62 blast furnaces, 213 open-hearth furnaces, and 248 rolling mills. Many pipe-rolling mills, steam boilers, steam turbines, steam engines, electric motors, metal-cutting lathes, and much hoisting and transport equipment were destroyed.

The entire power base of the Donbass was destroyed, and the railroads were either converted to narrow gauge, or destroyed.

The Germans presumed that the restoration of the Donbass would take decades and that, as a result, Soviet economy would be undermined. They were wrong. The restoration of the Donbass began immediately after its liberation. A number of coal mines were producing coal from 3 to 5 days after their liberation.

The date of the complete liberation of the Donbass was 8 September 1943. But preparatory work for restoration of the Donbass began long before then when a Bureau of the General Plan for the Restoration of the Donbass, charged with restoration of the Donbass coal industry, was formed under the People's Commissariat of Coal.

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The magnitude and technical complexity of the restoration of the Donbass have no precedents in the history of world industry. Restoration had to be begun without electric power, and under conditions difficult for the transfer of materials and equipment since the battlefield had first call on railroads.

The State Committee for Defense, aware of the significance of the rapid recovery of the Donbass to the recovery of industry in the southern USSR and as an important means of guaranteeing coal for railroad transport to keep it moving to the front, passed a resolution giving top priority to restoration of coal mines, coal-mining machine-building plants, and the development of coal mining in the Donbass.

After the liberation of the Donbass, the less-damaged coal mines were put into operation, and more than 600 small mines were opened. During the first year of restoration, more than 60 million cubic meters of water were pumped out. The mines of Stalin Oblast alone mined more than 6 million tons of coal. By the end of 1944, coal mining in the Donbass, as a whole, exceeded prewar figures, and coking coal was also beginning to be mined. At the end of the first year of restoration, 442 cutting machines, 567 conveyors, 90 electric locomotives, and many other machines were already being used in the Donbass coal fields.

In 1944, 220 primary mines, producing about 70 percent of the prewar total of the entire Donbass, were in process of reconstruction. Many coal-mining machine-building plants, ore-processing plants, central electrical and mechanical repair workshops, and other enterprises of the coal-mining industry were put into operation.

During the first year after liberation, about 100 primary mines, more than 300 kilometers of mine workings, about 900,000 cubic meters of industrial plants and installations, and over 1½ million square meters of living quarters, hospitals, schools, clubs, dining halls, and other cultural and service institutions were restored. To appreciate the results accomplished during the first year, we must realize that the over-all plan for recovery of the Donbass called for restoration of 300 primary mines, 2,850 kilometers of mine workings, and 5,900,000 cubic meters of technical buildings and installations; the construction or repair of 280 mine pile drivers, 515 lifts, and 570 ventilators; and construction and repair of 3,800,000 square meters of living quarters and cultural and service buildings. Among all the mines to be restored, 285 mines, with a stationary volume of 310 million cubic meters of water and an hourly inflow of 34,500 cubic meters of water, had to be pumped out.

Speed of recovery in the Donbass depended upon the speed of recovery of the country's power capacity, railroad transport, and coal-mining machine-building and repair facilities. The whole country assisted in restoration of the Donbass.

From the beginning of restoration work to June 1945, 162 pile drivers, 240 lifts, 253 ventilators, and 100 compressors were constructed or repaired; 600 kilometers of mine workings were restored; about 200 million cubic meters of water were pumped out; and about 1,300,000 cubic meters of industrial buildings and installations were restored.

In addition to restoration of coal mines, various processes were modernized. Dimensions of mine workings were reduced; efficient methods for opening mines were introduced; digging zones were plotted; and many stages in the underground mining of coal were eliminated.

The thoroughness of the German's destruction of the coal mines posed many difficult technical problems. The skill and initiative of the engineers and workers were instrumental in the solution of these problems. New and original methods were employed. For example, airlifts, skips, and horizontal pumps,

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adapted for work in constricted mine shafts, were used to pump water out of coal mines. As a result 700,000 cubic meters of water were pumped out of the mines daily.

The significance of the Donbass in Soviet economy was pointed out by Comrade Zhdanov in a speech on the 29th Anniversary of the Great October Socialist Revolution. The postwar Five-Year Plan aims at restoring and then exceeding the prewar level of coal mining in the Donbass. The goal set for 1950 is 88 million tons of coal. In 1949 and subsequent years, the Donbass will construct 60 new coal mines. The restoration and new construction of coal mines producing coking coal must be guaranteed. The restoration of the Donbass must be completed by the end of the post-war Five-Year Plan.

With the transition of the national economy to a peacetime basis, new demands were made on other branches of industry to assist in the restoration of the Donbass. The scope and speed of restoration work were significantly increased. Restoration work became more complex than it had been during the initial period of Donbass restoration. More complex mines with great depths and with very intricate networks of mine workings, and subjected to heavy demolition, were set up. The mines had to be placed on a new technical basis, utilizing all new achievements of technology, to ensure increased labor productivity.

To guarantee successful fulfillment of the tasks of the Five-Year Plan, the productive and technical experience acquired during World War II must be utilized; mines must be fitted out with all the new mining equipment; a base for the production of construction materials must be set up; production of structural metal must be accelerated; the power capacity of the Donbass must be increased.

Significant successes have already been achieved in the fulfillment of the postwar Five-Year Plan. During the first year of the plan, 36 large coal mines were put into operation. Many coal mines were restored and put into operation in 1947 and 1948. Pumping of all primary mines of the Donbass was completed by the end of 1947. In the 5 years after the liberation of the Donbass, 620 million cubic meters of water were pumped out. The coal mines of the Pas de Calais and northern Basins in France, destroyed by the Germans during World War I, had required 7 years for pumping out one sixth as much water as the Donbass coal mines.

During 5 years of restoration in the Donbass, the coal industry repaired or constructed 300 mine pile drivers, 700 lifts, 600 ventilators, and 300 compressor plants; 1,300 kilometers of mine workings and more than 1,600 kilometers of railroad tracks were restored or newly constructed. More than 3 million square meters of living quarters and 5½ million cubic meters of buildings and installations were restored or constructed.

Coal mining kept pace with the restoration of coal mines. In 1946, the Donbass surpassed the 1945 coal output by 30 percent. The 1947 output was 19 percent greater than the 1946 output. Coal output in the Donbass for three quarters of 1948 exceeded coal output for the first three quarters of 1947 by 20 percent.

The extent of mechanization of the coal industry also increased. Coal extraction became 97.3 percent mechanized; coal haulage to surface, 91.9 percent; coal conveyance, 80 percent; loading of coal on freight cars, 93 percent. Many difficult and labor-consuming processes, such as coal loading in the stopes and the loading of coal and rock in developed workings were mechanized. Coal combines, coal planes, coal and rock loading machines, high-power scraper conveyors, heavy electric locomotives, sinking shields, and other machines were built as prerequisites for further increases in labor productivity and mechanization of coal mining.

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The ferrous metallurgical industry, likewise destroyed by the Germans, was revived by the Soviet people after liberation despite shortages in manpower, electric energy, materials and equipment. Its restoration was carried out more intensively after the war.

The Five-Year Plan set prewar levels of production for pig iron, steel, rolled iron, and coke in the southern metallurgical industry; restored metallurgical plants in southern USSR, including 17 large ones; and restored seven pipe-rolling mills and foundries.

In the restoration of the metallurgical industry, new progressive techniques, more productive methods, and more complete organization of production were introduced. Widespread mechanization of labor-consuming processes were carried out in blast furnace and open-hearth furnace shops and rolling mills.

Blast and open-hearth furnaces were restored or constructed. In the Makeyevka Plant imeni Kirov, apart from restored blast and open-hearth furnaces, a number of new open-hearth furnaces were constructed. Blast furnace No 1 of this plant was more powerful and further developed than the prewar model. The blooming mill was improved. The Plant imeni Voroshilov underwent thorough modernization. New modern open-hearth furnaces replaced old, technically obsolete ones.

The coke by-product industry has been largely restored; 46 coke ranges were restored or constructed in old coke by-product plants. Plans were made for construction of two new coke by-product plants.

Much has been accomplished in restoration of the ferrous metallurgical industry of the South, and in particular of the Donbass. In 1943 and 1944, 13 blast furnaces with an annual production of 2,300,000 tons of pig iron, 70 steel furnaces with an annual production of 2,800,000 tons of steel, and 28 rolling mills with an annual production of 1,700,000 tons of finished rolled iron were put into operation.

At present, all the metallurgical plants of the Donbass are in operation.

Restoration of the Donbass has entered its last, decisive phase. To fulfill the tasks set for restoration of the Donbass in 1948-49 by the Five-Year Plan, 120 coal mines with a productive capacity of more than 52 million tons a year must be restored and put into operation.

A feature of the last phase of the Donbass restoration is the re-opening of very large and complex mines with a depth of 500-700 meters and a great network of underground workings. Examples are Mine No 1 "Kochegarka," "Krasny Profintern," Mine imeni Dzerzhinskiy and imeni Karl Marx of the Artemugol' Combine, 17-17 BIS imeni Chelyuskintsev and No 4-21 of the Stalingol' Combine, "Il'ich," Mine imeni Stalin, No 4-2 BIS Irmino, No 2 imeni Dzerzhinskiy of the Voroshilovgradugol' Combine, Mine imeni Artem of the Rostovugol' Combine.

The complexities of mine restoration, the great volume of restoration planned, and the short period of time allotted to restoration demand careful preparation of restoration work, good organization of labor, and complete mechanization of productive processes. Completion of building construction and supply of materials and equipment are also very important.

The condition of restoration work in a number of mines and other installations indicates the fact that restoration organizations are not yet fully utilizing resources allocated to them. As a result, the speed of restoration work has fallen off, and delays have arisen in the time the restored mines and other installations can be put into production. In a

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number of mines, which were to have been put into operation in 1948, there has been a diversion of labor and equipment to secondary sections, while primary sections engaged in the restoration and sinking of mine shafts, in the restoration and construction of mine buildings above the surface, and in the installation of basic equipment have suffered labor shortages. Other mines have excess labor personnel. In a number of cases, work standards are low and personnel and machines are improperly utilized.

Workers with special skills are not kept at their specialty but are put on other types of work. Labor productivity and speed of restoration work are thus lowered. Training of workers in many mines is not organized, and workers are not familiar with the norms of production or with their new machines. In 1948, some success was achieved in lowering labor turnover. Nevertheless, because of poor living quarters, labor turnover is still too high.

Slow delivery of equipment and materials often holds back the speed of restoration. Production of local construction materials has not yet been organized everywhere. Poor utilization of existing construction machinery and slow mastery of new mining machinery, designed for heavy and labor consuming work, are very important in delaying restoration work.

The technical difficulties experienced in the restoration of clogged mines, where the height of the clogging material is often 15-20 meters, are well known. The usual hand methods for restoring these clogged mine workings are associated with the problems of rock which has fallen into the area and with the filling up of holes by means of shoring. One linear meter of restored mine workings yields up to 40-50 cubic meters of rock and requires up to 20 cubic meters of wood for supports. The rate of restoration of these workings is 10-15 linear meters per month.

In 1945, Soviet engineer inventors constructed a special shield, unlike anything ever used before in the world, for restoring clogged mine workings. At Mine No 17-17 BIS of the Rutschenkuvogol' Trust, this shield recovered 1 1/2 meters of workings a day, collecting about 8 cubic meters of rock per linear meter of workings. Only 1.2 cubic meters of wood were required per linear meter. The workings recovered by the shield are in a satisfactory condition at present.

Despite the excellent results obtained by the shield in the recovery of clogged mine workings, the Ministry of Coal Industry, Eastern Regions, has not yet made widespread use of this effective and simple machine, but continues to recover clogged mine workings with costly and ineffective hand methods.

The "Utiny Nos" (Guide-blade) Type coal-loading machine intended for loading coal in preparatory workings is another example of slow mastery of new machines. After 2 years this machine is still in the experimental stage. The electric Type UMP-1, and the pneumatic Type PML-5 loading machines are not being fully utilized. The actual speed required to clear workings is far below the capacity of these machines. Only 25-35 linear meters a month, not much more than results from hand methods, are being cleared with these machines.

A number of Donbass mines have obtained high standards for utilization of these machines. In July 1948, utilizing the UMP-1, Mine No 4 of the Krasnoarmeyskugol' Trust cleared 75 linear meters, Mine No 2-7 Lidiyevka of the Rutschenkuvogol' Trust, 52 linear meters, and Mine imeni Voroshilov of the Dzerzhinskugol' Trust, 60 linear meters. Utilizing the PML-5, Mine No 10 imeni Artem of the Voroshilovugol' Trust cleared 66 linear meters.

Poor organization in clearing workings causes inefficient use of machinery. Successful fulfillment of the plan and restoration of Donbass coal require better utilization of machinery.

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The Five-Year Plan states that all coking coal and a large part of fuel coal must be refined with the object of lowering the ash and sulfur content. Recovery of the coal industry, as a whole, cannot take place unless refining factories are restored or constructed more rapidly. Organization of labor and supply of materials and equipment to these factories must be improved. Labor turnover must be stopped. The Ministry of Coal Industry, Eastern Regions, must guarantee an accelerated tempo of restoration and construction of refining factories.

In addition to shortcomings in restoration work, there are shortcomings in coal mining. Labor is not properly organized. Specialists are not utilized properly but are diverted to other work. Machines are not properly utilized. Much time is lost because of breakdowns in underground transport, and accidents to machinery. Repair of damaged machinery has not been properly organized.

The conversion of stopes to two work shifts has been officially carried out by a number of mines. Certain stopes, which are listed as having set up two work shifts, are actually working three shifts. Three shifts hinder the organization of repair work on stope machinery and the proper maintenance of work sites.

Progressive mines, which have properly organized two work shifts, have greatly increased labor productivity and coal output. Mine No 5-6 of the Krasnoarmeyskugol' Trust (Artemugol' Combine), under the direction of Comrade Brid'ko has achieved excellent results with two work shifts. Comrade Brid'ko's section did 1 1/2 cycles a day in the stope and dug 70-75 meters a month, three times as much as the average indices for the Stalinugol' Combine. The average labor productivity of miners was doubled, and productivity of cutting machines rose to 8,000 tons per month.

The high-work standards, attained by Donbass Stakhanovite miners, Comrades Tyurenkov, Shcherbenkov, Masalov, and others, who increased their production 1 1/2 to 2 times, must be attained by all mines and workers of the coal industry.

In certain Donbass mines only 65-70 percent of the machinery is in use. Many machines are idle because of shortages of parts and bearings. Even the machines in use have not yet attained the average prewar productivity in some mines. Construction of new machines is also going slowly. There has been great delay in the construction of coal combines and high-power cutting machines.

If the tasks of the Party and the Government are to be fulfilled, utilization of idle machines and introduction of new type machines must be improved.

The restoration and development of the Donbass will contribute to the further development of the economic and military power of the Soviet Union, and is a big step forward in the realization of Comrade Stalin's program, the mining of 500 million tons of coal per year in the USSR.

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